



Public Meeting on Water Quality in the Rivanna River Watershed

March 15, 2007



Why Are We Here?

- Learn about water quality in the Rivanna River and some tributaries to the Rivanna
- Explain efforts that the State is undertaking to improve and protect water quality
- Learn what you can do to help

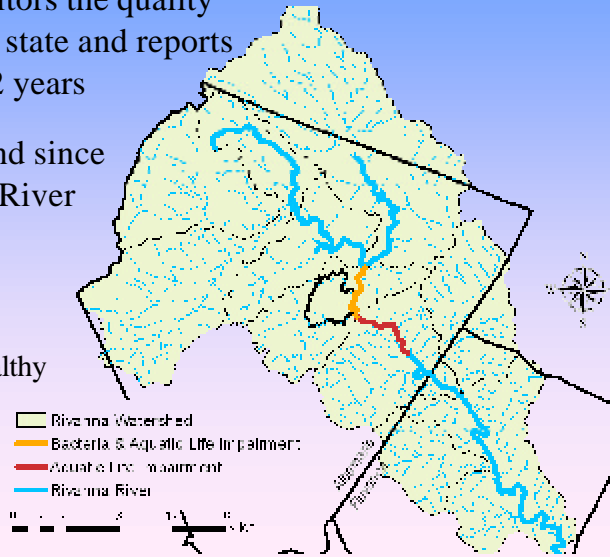


Photo courtesy of StreamWatch



What's the Status of the Rivanna?

- DEQ routinely monitors the quality of waters across the state and reports those results every 2 years
- In the last report (and since 1996), the Rivanna River has been listed as “impaired” for two reasons:
 - Doesn't support healthy aquatic life
 - Excess bacteria



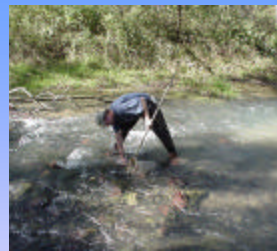
General Aquatic Life Impairment

What is the standard?

- State waters shall be free from pollutants which are harmful to aquatic life

How is this measured?

- Regional Biologist collects and identifies benthic (bottom-dwelling) macroinvertebrates (animals without backbones)
- The numbers and kinds of different benthic macroinvertebrates are compared to a healthy reference stream
- The stream is scored based on this comparison

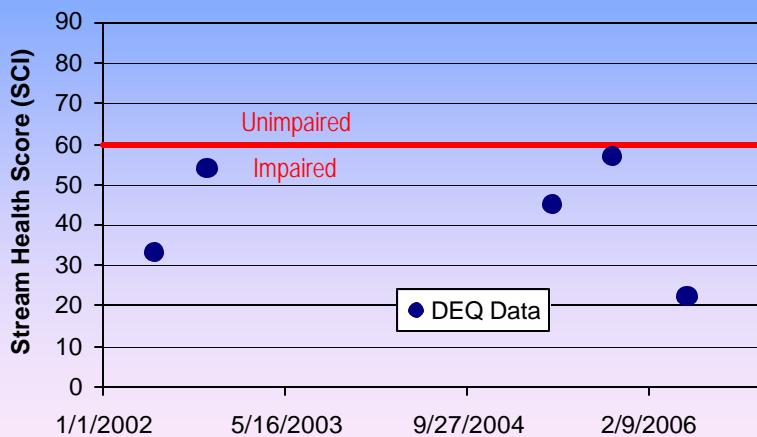


Why Do We Care About the “Bugs”?

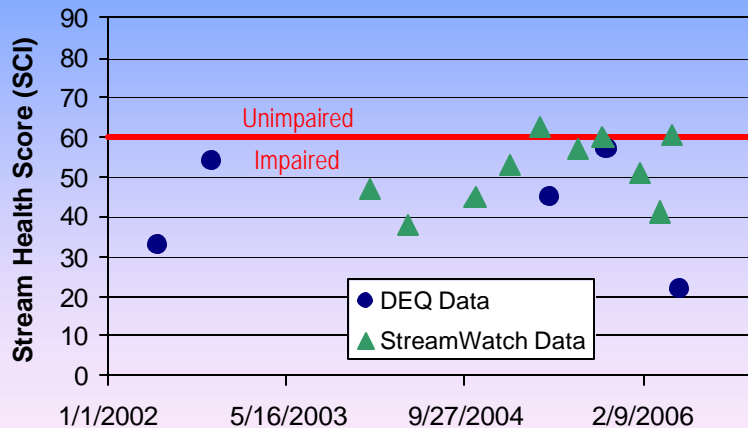
- Important food source for fish
- Important in cycling nutrients
- Good indicators of pollutants and overall stream health



What Were the Benthic Scores in the Rivanna?



What Were the Benthic Scores in the Rivanna?



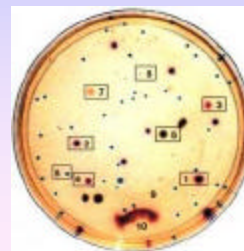
Bacterial Impairment

What does impaired mean?

- More than 10% of samples collected exceeded State standards for bacteria

What is the standard?

- No more than 400 fecal coliforms per 100ml water (~1/2 cup)
- No more than 235 E. coli/100ml
- Fecal coliforms and E. coli are indicators of human or animal waste



Why Are High Fecal Coliform Levels Bad?

- Presence of fecal coliforms indicate that other disease causing bacteria may be present

Human Health Concern

- Chance of gastrointestinal illness or infection during primary contact (e.g., water in mouth, nose, eyes, open wounds)

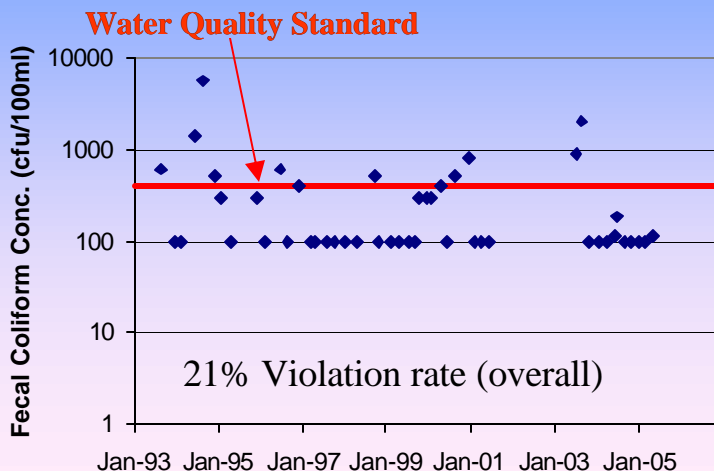
Other Concerns

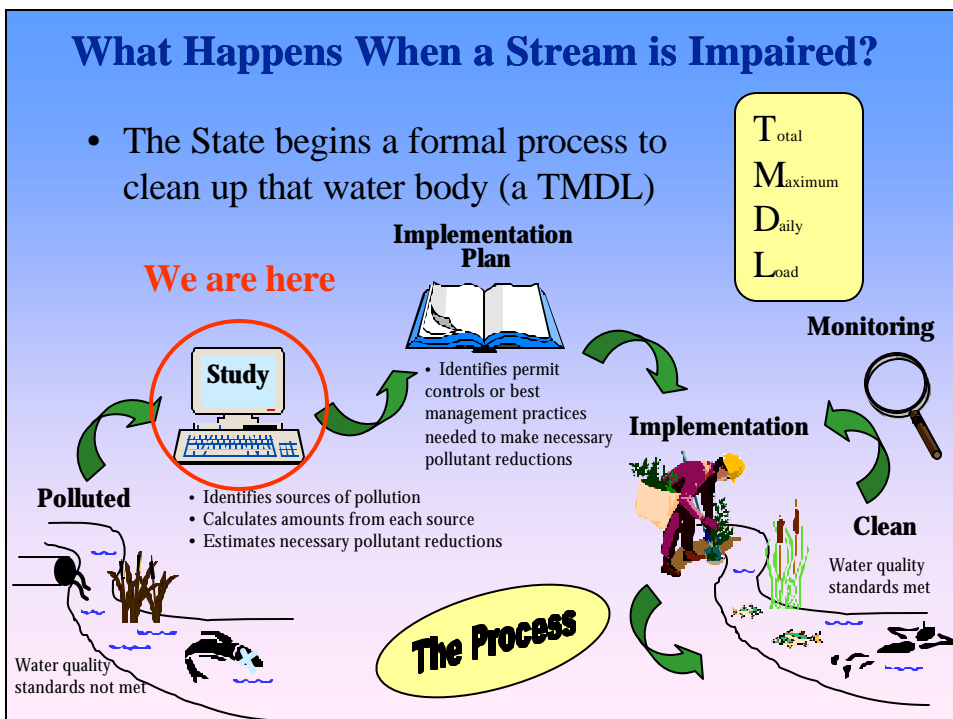
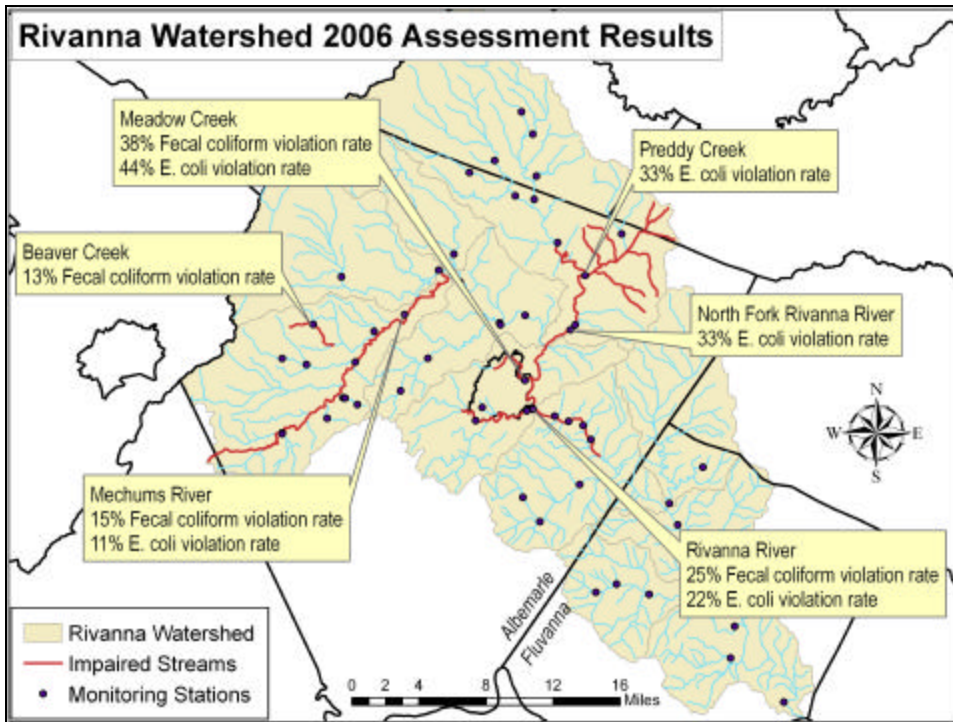
- Livestock health and weight gain



What Have Bacteria Levels Been Over Time in the Rivanna?

(E. Market St., Charlottesville)





Rivanna TMDL Studies

Aquatic Life Study

- Will address aquatic life impairments in:
 - Rivanna River mainstem

DEQ has contracted with:



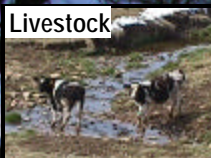
THE Louis Berger Group, INC.

to conduct the studies

Bacteria Study

- Will address bacteria impairments in:
 - Rivanna River mainstem
 - North Fork Rivanna
 - Preddy Creek
 - Meadow Creek
 - Mechums River
 - Beaver Creek

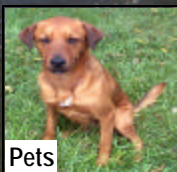
What Will This Study Do?



Livestock

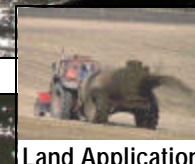


Point Sources

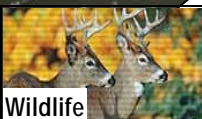


Pets

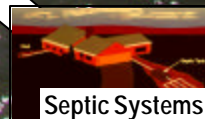
1. Identify all sources of fecal bacteria in the watershed
2. Quantify the amounts from each source



Land Application



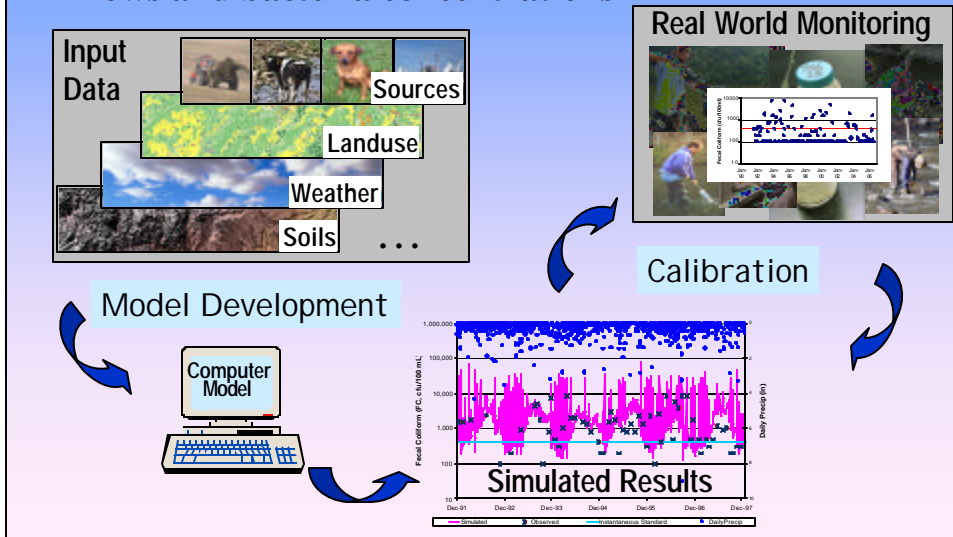
Wildlife



Septic Systems

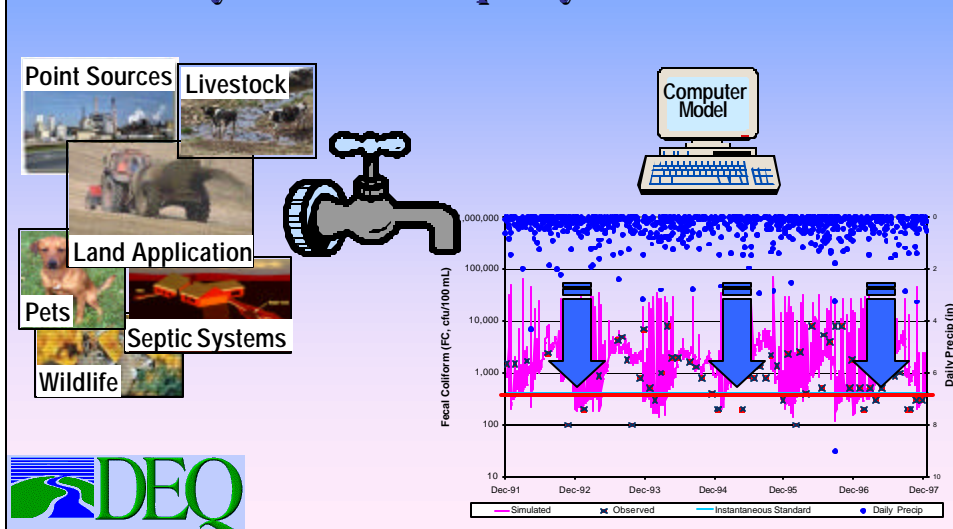
What Will This Study Do?

3. Develop a computer model to simulate instream flows and bacteria concentrations



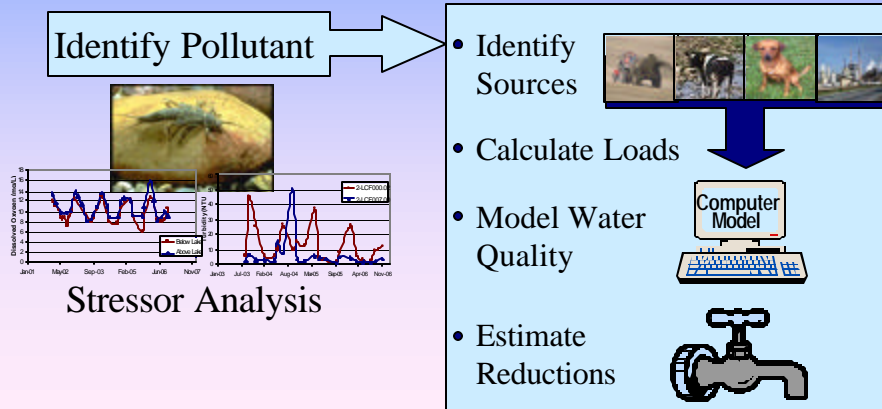
What Will This Study Do?

4. Estimate pollutant reductions from sources necessary to meet water quality standards



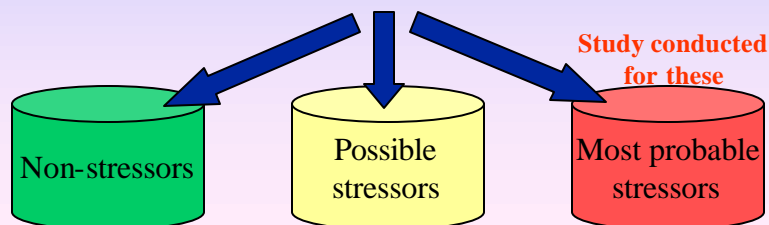
What Will the Aquatic Life Study Do?

- Similar steps as the Bacteria Study, but with one additional first step:

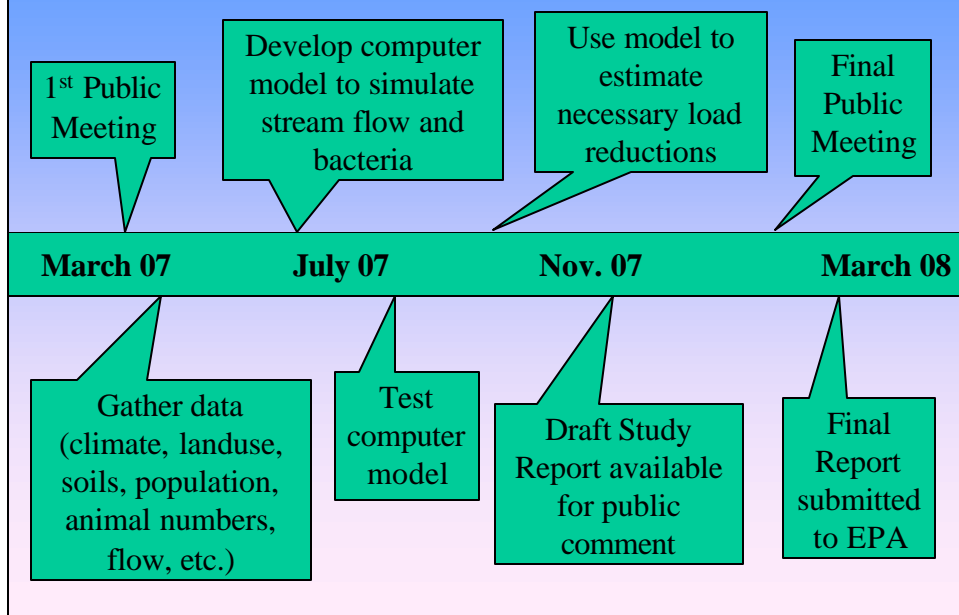


What is a Stressor Analysis?

- Answers the question: what pollutant is causing the aquatic life impairment?
- ✓ List all potential causes
 - DO, nutrients, pH, sediment, temperature, toxics, etc.
- ✓ Analyze the evidence for and against each
 - Biological, habitat, water quality, historic data, etc.
- ✓ Separate potential causes into the following bins



What is the Study Timeline?



What Can You Do to Help?

- Participate on a Local Steering Committee
 - Group of local citizens, landowners, organizations, and government entities that will provide input, review and assistance to DEQ during the study
 - Goal - make sure technical aspects of the study are accurate as well as acceptable to the community

Sign up tonight

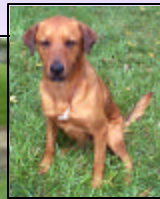


What Else Can You Do to Help?

- Begin implementing best management practices (BMPs) that improve water quality

Urban Areas

- riparian buffers
- use fertilizers and pesticides sparingly
- never pour hazardous materials in storm drains
- disconnect roof drains from sanitary or storm sewers
- pick up pet wastes



What Else Can You Do to Help?

Rural/Agricultural Areas

- riparian buffers
- septic pump-outs/repairs
- stream exclusion fencing
- alternative water systems
- rotational grazing
- nutrient management

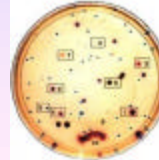


- Contact local S&WCD about programs and funding for BMPs at (434)975-0224



Recap

- Bacterial impairments in the Rivanna River, NF Rivanna, Mechums River, Preddy Creek, Beaver Creek, Meadow Creek
- Benthic impairment in the mainstem Rivanna River
- DEQ is beginning a Water Quality Study to investigate these impairments
- Your help is welcomed on a local steering committee
- Study will be followed up by a plan to implement voluntary improvements in the watershed with assistance from State and Federal funds



Questions?

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- Comment period for this public meeting ends April 15, 2007

